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CENTRAL INTELLIGENCE AGENCY

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INFORMATION REPORT

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SOURCE

1. The 19th meeting of the German Geophysical Society was held in Hannover from 6 October through 10 October 1953. The meeting was divided into three sections. The first section consisted of three days of scientific lectures at the Technische Hochschule in Hannover. The second section was an exhibition of geophysical equipment held on the grounds of the Firma Schlumberger-Gerätebau, Schleierbacher Landstrasse 60a, Hannover. The third section was a field trip to the oil fields in the neighborhood of Hannover with special emphasis on demonstration of new seismic measuring devices by the Elwanth Company.

2. The following papers were presented:

- a. F. Argence, Freiburg: The Computation of the True Electron Density in the Ionosphere.
- b. H. Berg, Cologne: Critical Remarks Concerning the Interpretations of Local Earthquakes.
- c. A. Bibl, Freiburg: Disturbances of High Frequency Space in the Ionosphere.
- d. R. Bortfeld, Westerballe: Comments on the Determination of Density According to the Methods of Westerballe.
- e. O. Burkard, Graz: Recent Findings Concerning the Ionospheric F₂ Layer.
- f. E. David, Hamburg: The Behavior of Materials Under Pressures Comparable to Those of the Interior of the Earth.
- g. G. Fenselau, Niamegk: On New Work at the Geomagnetic Observatory in Niamegk.
- h. H. Flatne, Hannover: Prospecting and Delimitation of Sound Sources by Means of Geo-electric Measurement.
- i. H. Flander, Hannover: The Laterolog, a New Resistance-Type Measuring Device.
- j. O. Foertsch, Munich: The Cause of the Absorption of Elastic Waves.

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- k. A. Hahn, Hannover: The Measurement of the Vertical Gradients of Z with the Field Magnetometer.
- l. O. Kappelmeier, Hannover: Research in the Earth's Surface Temperature.
- m. R. Lauterbach, Leipzig: The Question of the Geological Meaning of Small Geomagnetic Anomalies.
- n. K. Luchner, Hannover: The Scintillation Counter for the Determination of Different Gamma-rays.
- o. H. Martin, Jena: The Wave Front Process and the Seismic Report.
- p. K. Rauer and E. Argence, Freiburg: The Development of the E-layer in the Ionosphere.
- q. H. Reich, Munich: Concerning the Propagation of Seismic Impulses in the Juras of Southern Germany.
- r. W. Schuhmann, Berlin: A Discussion of the Developmental Work in the Area of "Construction-geophysics."
- s. K. Strobach, Hamburg: Systematic Transmission Time Differences of the P-phase for a Few European and North American Stations.
- t. G. Vidal, Hannover, Munich: Report of Seismic Measurements in the Austrian Alps.
- u. I. Wendt, Hannover: Potash Determination with the Geiger Counter.
- v. H. Westerhausen, Elmhorn: Concerning the Location of Microseismic Disturbance Centers.

1. "The Work at the Nismes Observatory," presented by Dr. Gerhard Fasselau, invoked the greatest interest. It was particularly interesting because many of the scientists in attendance had been unable to maintain contact with their former colleagues from Potsdam, Leipzig, Dresden and Jena and they welcomed, wholeheartedly, any news of the work carried on at the observatories and institutes where they once worked. Dr. Fasselau stated that plans for the establishment of new bases for the measurement of the horizontal and vertical intensities of the earth's magnetism had existed for many years but not until this year was the work actually carried out under his direction at Nismes. Another problem handled at Nismes was the maintenance of a constant magnetic field over a relatively large area.

2. In 1933 Fasselau developed an apparatus to time and count the number of current impulses set up by a swinging magnet. Within the last year he has improved the device by substituting an electric flash for incandescent light in the exposure of the photographic plates so that the pivoted indicator is more sharply outlined.

3. Fasselau also discussed the new field magnetometer which employs a band rather than a knife edge for the suspension of the magnet system. He strongly emphasized his accomplishment in combining the measurements of the horizontal and vertical components of the earth's magnetism.

4. In contrast to the method used at the Winget observatory, Fasselau has developed a fairly good system for obtaining the time derivatives of the vertical and horizontal intensities. At Winget, the measurements are made with the relatively small coils for many windings and with soft iron cores; at Nismes, Fasselau has fashioned a wire to a frame enclosing a large area producing, in effect, a single winding horizontal circuit or loop. A current is induced in it through the variations of the vertical component of the earth's magnetism. For the horizontal

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time derivative the circuit will be located around one of the observatory buildings.

7. Personnel at the Niemegk observatory are also interested in the measurement of earth current between two electrodes located relatively close together. H. Schmidt reported in the discussion following Fenselau's talk that he had developed a new method of measuring magnetic field strength making use of proton resonance. The method is a complicated one and the advantages did not appear obvious, especially in view of the fact that any natural magnetic field can be nullified by an artificial one and the artificial field can be determined with great accuracy.

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